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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,678	01/29/2001	Joseph E. Augenbraun	WGATE12	5433
26291	7590	08/12/2004	EXAMINER	
MOSER, PATTERSON & SHERIDAN L.L.P.			SHANNON, MICHAEL R	
595 SHREWSBURY AVE, STE 100				
FIRST FLOOR			ART UNIT	
SHREWSBURY, NJ 07702			PAPER NUMBER	
			2614	11

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/770,678

**Applicant(s)**

AUGENBRAUN ET AL.

**Examiner**

Michael R Shannon

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-67 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8 and 9</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities:

On page 5, line 19, "C6U" should be corrected to read "CLU".

Appropriate correction is required.

### *Drawings*

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "12" and "24a" have both been used to designate "the cable headend". It is assumed that 24a is a reference to "Remote Server" (as indicated by the disclosure); however, corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference character(s) mentioned in the description: 34a. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet

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should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-49, 51-64, and 66-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ludvig et al (6,415,437), cited by examiner, in view of Wang (6,675,385), cited by examiner.

With regards to claim 1, the Ludvig reference discloses an interactive program guide generator and delivery system, in which a headend, distribution network, and a plurality of set-top boxes (subscriber equipment) interact to deliver a combination of background information, video frame sequences, and program guide graphics to the subscriber to form the interactive program guide (IPG). The claimed system for transmitting program guide information in a television distribution system is met as follows: the claimed network headend is met by the service provider equipment (SPE)

102 which produces a plurality of digital bitstreams that contain encoded information, modulates the bitstream to be compatible with the distribution network, and delivers the bitstreams to subscriber equipment. The claimed script generator for generating a plurality of pages of programming information from program guide information, at least some of which include programming description information for a group of television channels during a selected time interval is met by IPG grid generator 120 which provides a program guide graphic to the IPG generator 116. The IPG grid generator 120 formats the guide program data, which can include program information (see column 3, lines 65-67), into rectangular grid graphics and program cells, which is provided to the IPG generator 120 (see column 4, lines 55-64). The claimed distribution network for broadcasting a multiplexed datastream is met by the distribution network 104, which broadcasts bitstreams to subscriber equipment 106. The claimed downstream channel interfaced to the distribution network for broadcasting pages of programming information to one or more terminal devices is met by the implied connection of the distribution network 104 to subscriber equipment 106, as pictured in Figure 1. The Ludvig reference further discloses a multiplexer 206 for multiplexing multiple bitstreams into a single transport stream (see column 6, lines 44-48), however it does not disclose that the network headend broadcasts this transport stream in a repeated carousel manner, as claimed.

Still with regards to claim 1, Wang teaches the transmission of an HTML-style electronic program guide (EPG) on a digital TV system. Wang also teaches a Data Streamer 18, which formats the HTML-style pages into partitioned MPEG-2 data

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packets for transport over an MPEG-2 digital television network in a rotating data carousel for delivery to a user set-top box. Therefore, the claimed broadcast method of sending the transport stream in a repeated, carousel manner is met by Wang, column 2, lines 9-12 and 27-38. At the time of the invention it would have been clearly obvious to a person of ordinary skill in the art to incorporate the carousel data transmission scheme of Wang into the system of Ludvig, in order to provide the subscriber equipment with constant access to the data being streamed in the carousel.

With regards to claim 2, note the Ludvig reference Figure 1, wherein the claimed system is met as follows: The claimed "plurality of terminal devices" is met by subscriber equipment (SE) 106, 106<sub>2</sub>, and 106<sub>3</sub>. The claimed receiver for receiving pages of programming information is met by the demodulator/decoder 124, which demodulates the signals carried by the distribution network 104 and decodes the demodulated signals to extract the IPG pages from the bitstream. The claimed terminal processor for managing display of pages of programming information, and a terminal processor application for selectively accessing one or more pages in response to inputs from a system viewer, and formatting pages into one or more corresponding video images for display on a video monitor is met by the implied processes carried out in the subscriber equipment 106. The use of program identifiers to identify each page of the IPG (for selectively accessing one or more pages) and the "functionality control" which is broadcast with the IPG in the transport stream allow for the system to respond to viewer input. The video display 126 is responsible for displaying the IPG (see column 5, lines 16-37).

With regards to claim 3, the claimed system is met by Ludvig as follows: The claimed background screen generator for generating a digital background screen image to be broadcast by a distribution network on at least one downstream channel and the display manager for generating a video display image in which selected pages of programming information are overlaid on the background screen image are met by the background storage device 118 and the IPG generator 116, which generates a background screen for the IPG. In the IPG generator, IPG grids are overlaid atop the background/advertisement composite (see column 5, lines 4-15). The background screen and IPG pages are then encoded within the IPG generator and sent to the modulator for network distribution.

With regards to claim 4, Ludvig and Wang teach all of that which is discussed above with regards to claims 1 and 2. Wang further teaches a work memory 28 and cache memory 30 for storing pages of EPG/IPG information for later use by the set-top box 24 and display. The claimed memory for storing pages of programming information is met by column 4, lines 44-55, wherein Wang teaches the use of the two memory devices for storage of pages that are predicted to be requested on a rapid basis at a later time. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of a memory device of Wang into the system as discussed above, in order to allow for faster access to rapidly and frequently used pages of the EPG.

With regards to claim 5, Ludvig and Wang teach all of that which is discussed above with regards to claims 1, 2 and 4. Wang further teaches a cache memory 30,

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which stores those pages that are expected to be needed on a rapid basis. The claimed programming for pre-caching selected pages of programming information in memory before a request for the display of selected pages of programming information is received from a viewer, wherein the selected pages are referenced by or related to a currently displayed page is met by column 4, lines 44-55, wherein Wang teaches that the EPG information is organized into a group of linked EPG pages. Therefore, it can be understood that those pages with references to currently viewed or recently viewed pages will subsequently be viewed and should therefore be stored in cache memory. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of a memory device of Wang into the system as discussed above, in order to allow for faster access to rapidly and frequently used pages of the EPG.

With regards to claim 6, Ludvig and Wang teach all of that which is discussed above with regards to claims 1, 2 and 4. Wang further teaches a cache memory 30, which stores those pages that are expected to be needed on a rapid basis. The claimed background screen image, on which pages of programming information are to be overlaid when formatted into a video image, and which is stored in memory and accessed by the terminal processor application is met by column 4, lines 44-55, wherein Wang teaches that some frequently used pages (which constitutes the claimed background image) are stored in the cache memory 30. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of the ability to store pages (in our case, the background image) in the cache memory of



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Wang into the system as discussed above, in order to allow for faster access to the background image and therefore, faster page loading.

With regards to claim 7, Ludvig and Wang teach all of that which is discussed above with regards to claims 1, 2 and 4. Wang further teaches downloading of a "channel guide control map" that associates a Channel Guide Broadcast Event with its channel number. The claimed, virtual digital channel contained within a downstream channel, whereupon a terminal device further includes a channel mapping database in memory that identifies a virtual digital channel to which each of the pages of programming information is assigned to facilitate display of the pages of programming information by the terminal processor is met by the "channel guide control map" being stored in the control map cache 52E and used to map virtual channels. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of the "channel guide control map" and the control map cache of Wang into the system as discussed above, in order to allow for a mapping of virtual channels contained within the downstream channel.

With regards to claim 8, Ludvig and Wang teach all of that which is discussed above with regards to claims 1, 2 and 4. Wang further teaches "Program Information Web Pages" which display detailed information about the TV program, such as a full title, synopsis, genre, rating, cast, production date, channel name, channel number, show time, and the like. Figure 5 shows a detailed "Program Information Page" which can be activated by clicking on a program title and requesting more information. The claimed programming for highlighting selected text on pages, accessing information

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related to the selected text in response to an input from a viewer, and displaying the related information in a selected area on one of the video images is met by Figure 5 and column 6, lines 42-45, as described. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of the "Program Information Web Page" as taught by Wang into the system as discussed above, in order to allow a viewer to easily access further information regarding a desired program, therefore making the EPG more dynamic and interactive.

With regards to claim 9, Ludvig and Wang teach all of that which is discussed above with regards to claims 1, 2, 4, and 8. Wang further teaches that the displayed detailed information about the TV program contains elements such as a full title, synopsis, genre, rating, cast, production date, channel name, channel number, show time, and the like. Figure 5 shows a detailed "Program Information Page" which can be activated by clicking on a program title and requesting more information. The claimed text comprising television channel identification information and a program title, with related information comprising a description of the programming content is met by Figure 5 and column 6, lines 42-45, as described. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of the "Program Information Web Page" as taught by Wang into the system as discussed above, in order to allow a viewer to easily access further information regarding a desired program, therefore making the EPG more dynamic and interactive.

With regards to claim 10, the claimed input device is met by Ludvig column 8, lines 28-30, wherein he makes reference to a user actuated "input device" which is used to make selections through the subscriber equipment.

With regards to claim 11, the claimed input device which includes a plurality of selection keys for selectively highlighting selected text displayed in a video image, and accessing additional pages of programming information is met by Ludvig, column 8, lines 28-51, wherein he teaches a scrolling function for selectively highlighting text and a method for accessing more IPG screens through the use of a last cell at the bottom of the current page or a special icon (arrow).

With regards to claim 12, the claimed selection key on the input device for accessing a page of program guide information that corresponds to a future time period for a group of channels whose program information for a selected time period is presently being displayed, is met by Ludvig, column 8, lines 48-51, wherein he teaches the ability to scroll through "parallel" pages to display additional time slots and view programming in other time periods.

With regards to claim 13, the claimed selection key on the input device for accessing a page of program guide information that corresponds to a group of channels that is next in sequence to a group of channels whose program information for a selected time period is presently being displayed, is met by Ludvig, column 8, lines 33-37, wherein he teaches the ability to reach the bottom of the currently displayed IPG and select a special icon in order to display the next page of channel information.

With regards to claim 14, the claimed ability to display the next group of channel information highlighting a highest numbered channel on a presently displayed page of program information, and pressing a selection key on the input device, is met by Ludvig, column 8, lines 33-37, wherein he teaches the ability to reach the bottom of the currently displayed IPG and select a last cell in order to display the next page of channel information.

With regards to claim 15, Ludvig and Wang teach all of that which is discussed above with regards to claims 1, 2, 4, 7, and 10. Wang further teaches a "Topic Guide Web page" which displays the "programming schedule sorted into a format to show certain topics, such as 'movies', 'sports', 'news', etc.". In Figure 6 and Figure 7, Wang shows that once a viewer clicks on a Topic, they are advanced to a Guide related specifically to the topic they chose. The claimed category based groups of pages that include program information organized by a plurality of content related categories, wherein these category pages are accessible by highlighting and selecting a category field on a displayed page is met by Wang, Figures 6 and 7, and column 5, lines 65-67, as described. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the category based browsing taught by Wang into the system as discussed above, in order to allow the user the ability to sort programs based on a specific category in order to more easily browse the EPG.

With regards to claim 16, the claimed selection key for accessing a channel on which a program that is currently highlighted on a displayed page of program information is broadcast is implied by Ludvig in column 3, lines 63-65. Ludvig states,

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"To assist a subscriber (or other viewer) in selecting programming, the SPE 102 produces a interactive program guide (IPG) in accordance with the present invention."

The ability to select a channel to view and display is presented. Also, highlighting of selections and utilizing the IPG page is discussed by Ludvig in column 8, lines 26-33.

With regards to claim 17, Ludvig and Wang teach all of that which is discussed above with regards to claim 1. Wang further teaches a channel consisting of "multiple data streams". The claimed second digital multiplexer for receiving multiplexed datastream from a first multiplexer, and multiplexing the datastream with a source of digital television signals to form a second multiplexed datastream that is comprised of the program guide information and digital television signals, and is broadcast by the distribution network on at least one downstream channel is met by Wang, column 7, lines 31-42, wherein he outlines the ability to broadcast a plurality of multiplexed digital television channels and broadcast data (EPG information) at the same time. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the digital television transmission and data broadcast transmission into the same transport stream of Wang into the system as discussed above, in order to allow for a simple system which transmits EPG data and audio/video information through the same distribution network and transport stream.

With regards to claim 18, the claimed database in the network headend for storing program guide information to be accessed and formatted into pages by a script generator is met by Ludvig's use of Guide Data, which is temporarily stored in the

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headend for use by the IPG Grid Generator 120. The IPG Grid Generator 120 then uses the data to format the IPG pages to be broadcast.

With regards to claim 19, the claimed remote server for storing program guide information, and delivering this information to a script generator in the headend to be formatted into pages of programming information, is met by Ludvig, column 4, lines 59-64, wherein Ludvig discusses receiving the Guide Data from a number of different sources and sending the data to the IPG Grid Generator 120. The IPG Grid Generator 120 then uses the data to format the IPG pages to be broadcast.

With regards to claim 20, the claimed remote server being accessible by the script generator through the Internet is met by Ludvig, column 4, lines 59-64, wherein Ludvig states that the "IPG data ... can be provided from ... an internet site". This received data is then provided to the script generator (IPG Grid Generator 120) for use to format the IPG pages to be broadcast.

With regards to claim 21, Ludvig and Wang teach all of that which is discussed above with regards to claim 1. Wang further teaches regenerating IPG pages once every hour in order to provide current time information to the transport stream. The claimed ability for the script generator to generate updated pages of programming information on a periodic basis is met by Wang, column 6, lines 33-35, wherein Wang teaches the ability to regenerate pages every hour in order to provide current information to the transport stream. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of the IPG page

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regeneration once every hour of Wang into the system as discussed above, in order to allow for a more current IPG and valid information being transmitted in the broadcast.

With regards to claim 22, see the above rejection for claim 21. Updating and regenerating the IPG pages is the distinction of claim 21. The idea of specifying a timeframe for updating pages is not a patentable distinction between these two claims and is therefore rejected. The ability to update IPG pages as frequently as possible without degrading the overall speed, bandwidth, and quality of the entire system would be ideal in order to provide the most current information possible to the user.

With regards to claim 23, The claimed method for transmitting program guide information in a television distribution system is met as follows: the claimed step of accessing programming information with a script generator in a network headend is met by the service provider equipment (SPE) 102 and the IPG grid generator 120 which provides a program guide graphic to the IPG generator 116 based on Guide Data. The IPG grid generator 120 formats the guide program data, which can include program information (see column 3, lines 65-67), into rectangular grid graphics and program cells, which is provided to the IPG generator 120 (see column 4, lines 55-64). The claimed step of generating a plurality of pages of programming information from program guide information, at least some of which include programming description information for a group of television channels during a selected time interval is met by IPG grid generator 120 which provides a program guide graphic to the IPG generator 116. The IPG grid generator 120 formats the guide program data, which can include program information (see column 3, lines 65-67), into rectangular grid graphics and

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program cells, which is provided to the IPG generator 120 (see column 4, lines 55-64).

The step of broadcasting a multiplexed datastream on at least one downstream channel interfaced to the network headend is met by the distribution network 104, which

broadcasts bitstreams to subscriber equipment 106. Also, the implied connection of the distribution network 104 to subscriber equipment 106, as pictured in Figure 1, indicates

that the subscriber equipment is connected to the distribution network and therefore, to the headend by at least one downstream channel. The claimed step of generating a multiplexed datastream from IPG pages and interleaving and repeating in a carouseled manner is met in part by Ludvig. The Ludvig reference discloses a multiplexer 206 for multiplexing multiple bitstreams into a single transport stream (see column 6, lines 44-48), however it does not disclose that the network headend broadcasts this transport stream in a repeated carouseled manner, as claimed.

Still with regards to claim 23, Wang teaches the transmission of an HTML-style electronic program guide (EPG) on a digital TV system. Wang also teaches a Data Streamer 18, which formats the HTML-style pages into partitioned MPEG-2 data packets for transport over an MPEG-2 digital television network in a rotating data carousel for delivery to a user set-top box. Therefore, the claimed broadcast method of sending the transport stream in a repeated, carouseled manner is met by Wang, column 2, lines 9-12 and 27-38. At the time of the invention it would have been clearly obvious to a person of ordinary skill in the art to incorporate the carouseled data transmission scheme of Wang into the system of Ludvig, in order to provide constant access to the steamed data at the set-top box by reception of the data carousel.



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With regards to claim 24, note the Ludvig reference Figure 1, wherein the claimed method is met as follows: The claimed step of receiving multiplexed datastream with at least one terminal device interfaced to at least one downstream channel, said terminal device including a terminal processor, is met by subscriber equipment's (SE's) 106, 106<sub>2</sub>, and 106<sub>3</sub>, the demodulator/decoder 124 which demodulates the signals carried by the distribution network 104 and decodes the demodulated signals to extract the IPG pages from the bitstream, and the processor is met by the implied processes carried out in the subscriber equipment 106. The use of program identifiers to identify each page of the IPG (for selectively accessing one or more pages) and the "functionality control" which is broadcast with the IPG in the transport stream allow for the system to respond to viewer input. The video display 126 is responsible for displaying the IPG (see column 5, lines 16-37). The step of formatting the datastream with the terminal processor into a plurality of video images for display on a video monitor is met by the above demodulator/decoder 124 and display 126. The images that contain programming description information for multiple groups of television channels is met by column 3, lines 65-67, wherein Ludvig discusses the information present on each IPG page.

With regards to claim 25, the claimed method is met as follows: The claimed step of generating a digital background screen image with a background screen generator in a headend and is met by the background storage device 118 and the IPG generator 116, which generates a background screen for the IPG. The step of broadcasting the background screen image on at least one downstream channel is met by the fact that

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the background screen and IPG pages are then encoded within the IPG generator and sent to the modulator for network distribution. The step of receiving the background screen image with the terminal device is met by column 5, lines 16-20, wherein Ludvig discloses subscriber equipment for demodulating/decoding the transport stream and extracting the IPG pages from the bitstream. The step of generating a video display image with terminal processor in which selected pages of programming information are overlaid on the background screen image is met by the IPG generator, wherein, IPG grids are overlaid atop the background/advertisement composite (see column 5, lines 4-15). The background screen and IPG pages are then encoded within the IPG generator and sent to the modulator for network distribution.

With regards to claim 26, Ludvig and Wang teach all of that which is discussed above with regards to claims 23-25. Wang further teaches a cache memory 30, which stores those pages that are expected to be needed on a rapid basis. The claimed step of storing the background screen image in a memory is met by column 4, lines 44-55, wherein Wang teaches that some frequently used pages (which constitutes the claimed background image) are stored in the cache memory 30. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of the ability to store pages (in our case, the background image) in the cache memory of Wang into the system as discussed above, in order to allow for faster access to the background image and therefore, faster page loading.

With regards to claim 27, Ludvig and Wang teach all of that which is discussed above with regards to claims 23 and 24. Wang further teaches a work memory 28 and

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cache memory 30 for storing pages of EPG/IPG information for later use by the set-top box 24 and display. The claimed step of storing pages of programming information in a memory in the terminal device as they are received is met by column 4, lines 44-55, wherein Wang teaches the use of the two memory devices for storage of pages that are predicted to be requested on a rapid basis at a later time and storage of pages in the work memory which are being viewed. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of a memory device of Wang into the system as discussed above, in order to allow for faster access to rapidly and frequently used pages of the EPG.

With regards to claim 28, Ludvig and Wang teach all of that which is discussed above with regards to claims 23, 24, and 27. Wang further teaches a cache memory 30, which stores those pages that are expected to be needed on a rapid basis. The claimed step of pre-caching in memory before a request for display of selected pages of programming information is received from a viewer, selected pages being referenced by or related to a currently displayed page is met by column 4, lines 44-55, wherein Wang teaches that the EPG information is organized into a group of linked EPG pages. Therefore, it can be understood that those pages with references to currently viewed or recently viewed pages will subsequently be viewed and should therefore be stored in cache memory. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of a memory device of Wang into the system as discussed above, in order to allow for faster access to rapidly and frequently used pages of the EPG.

With regards to claim 29, Ludvig and Wang teach all of that which is discussed above with regards to claims 23, 24, and 27. Wang further teaches downloading of a "channel guide control map" that associates a Channel Guide Broadcast Event with its channel number. The claimed virtual digital channel contained within the downstream channel, and the terminal device including a channel mapping database in memory that identifies a virtual digital channel to which each of the pages of programming information is assigned, and the ability to access this database to locate the page in the multiplexed datastream is met by the "channel guide control map" being stored in the control map cache 52E, which is used to map virtual channels. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of the "channel guide control map" and the control map cache of Wang into the system as discussed above, in order to allow for a mapping of virtual channels contained within the downstream channel.

With regards to claim 30, Ludvig and Wang teach all of that which is discussed above with regards to claims 23 and 24. Wang further teaches "Program Information Web Pages" which display detailed information about the TV program, such as a full title, synopsis, genre, rating, cast, production date, channel name, channel number, show time, and the like. Figure 5 shows a detailed "Program Information Page" which can be activated by clicking on a program title and requesting more information. The claimed step of highlighting selected text on a page in response to an input received from an input device, accessing information related to the selected text in response to an input received from a viewer, and displaying related information in a selected area on

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the video image is met by Figure 5 and column 6, lines 42-45, as described. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of the "Program Information Web Page" as taught by Wang into the system as discussed above, in order to allow a viewer to easily access further information regarding a desired program, therefore making the EPG more dynamic and interactive.

With regards to claim 31, Ludvig and Wang teach all of that which is discussed above with regards to claims 23, 24, and 30. Wang further teaches that the displayed detailed information about the TV program contains elements such as a full title, synopsis, genre, rating, cast, production date, channel name, channel number, show time, and the like. Figure 5 shows a detailed "Program Information Page" which can be activated by clicking on a program title and requesting more information. The claimed text comprising television channel identification information and a program title, with related information comprising a description of the programming content is met by Figure 5 and column 6, lines 42-45, as described. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of the "Program Information Web Page" as taught by Wang into the system as discussed above, in order to allow a viewer to easily access further information regarding a desired program, therefore making the EPG more dynamic and interactive.

With regards to claim 32, the claimed step of entering one or more information requests into the terminal processor with an input device by actuating one or more keys is met by Ludvig column 8, lines 28-30, wherein he makes reference to a user actuated

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"input device" which is used to make selections through the subscriber equipment. The claimed request for accessing a page of program guide information that corresponds to a next future time period for a group of channels whose program information for a

selected time period is presently being displayed is met by Ludvig, column 8, lines 48-51, wherein he teaches the ability to scroll through "parallel" pages to display additional

time slots and view programming in other time periods. The claimed request for accessing a page of program guide information that corresponds to a group of channels that is next in sequence to a group of channels whose program information for a selected time period is presently being displayed is met by Ludvig, column 8, lines 33-37, wherein he teaches the ability to reach the bottom of the currently displayed IPG and select a special icon in order to display the next page of channel information. The claimed request for accessing a channel on which a program that is currently highlighted on a displayed page of program information is broadcast is implied by Ludvig in column 3, lines 63-65. Ludvig states, "To assist a subscriber (or other viewer) in selecting programming, the SPE 102 produces a interactive program guide (IPG) in accordance with the present invention." The ability to select a channel to view and display is presented. Also, highlighting of selections and utilizing the IPG page is discussed by Ludvig in column 8, lines 26-33.

With regards to claim 33, the step of selecting the next group of channel information by highlighting a highest numbered channel on a presently displayed page of program information, and pressing one of the keys on said input device is met by Ludvig, column 8, lines 33-37, wherein he teaches the ability to reach the bottom of the

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currently displayed IPG and select a last cell in order to display the next page of channel information.

With regards to claim 34, the step of accessing programming guide information with a script generator in a network headend, which comprises accessing the information from a database in the headend is met by Ludvig's use of Guide Data, which is temporarily stored in the headend for use by the IPG Grid Generator 120. The IPG Grid Generator 120 then uses the data to format the IPG pages to be broadcast.

With regards to claim 35, the step of accessing programming guide information with a script generator in a network headend, which comprises accessing the information from a remote server is met by Ludvig, column 4, lines 59-64, wherein he discusses receiving the Guide Data from a number of different sources and sending the data to the IPG Grid Generator 120. The IPG Grid Generator 120 then uses the data to format the IPG pages to be broadcast.

With regards to claim 36, the step of accessing the remote server through the Internet is met by Ludvig, column 4, lines 59-64, wherein he states that the "IPG data ... can be provided from ... an internet site". This received data is then provided to the script generator (IPG Grid Generator 120) for use to format the IPG pages to be broadcast.

With regards to claim 37, Ludvig and Wang teach all of that which is discussed above with regards to claim 23. Wang further teaches regenerating IPG pages once every hour in order to provide current time information to the transport stream. The step of generating updated pages of programming information on a periodic basis is met by

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Wang, column 6, lines 33-35, wherein Wang teaches the ability to regenerate pages every hour in order to provide current information to the transport stream. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of the IPG page regeneration once every hour of Wang into the system as discussed above, in order to allow for a more current IPG and valid information being transmitted in the broadcast.

With regards to claim 38, see the above rejection for claim 37. Updating and regenerating the IPG pages is the distinction of claim 37. The idea of specifying a timeframe for updating pages is not a patentable distinction between these two claims and is therefore rejected. The ability to update IPG pages as frequently as possible without degrading the overall speed, bandwidth, and quality of the entire system would be ideal in order to provide the most current information possible to the user.

With regards to claim 39, Ludvig and Wang teach all of that which is discussed above with regards to claims 23 and 24. Wang further teaches a "Topic Guide Web page" which displays the "programming schedule sorted into a format to show certain topics, such as 'movies', 'sports', 'news', etc.". In Figure 6 and Figure 7, Wang shows that once a viewer clicks on a Topic (category), they are advanced to a Guide related specifically to the topic they chose. The claimed category based groups of pages that include program information organized by a plurality of content related categories, wherein these category pages are accessible by highlighting and selecting a category field on a displayed page is met by Wang, Figures 6 and 7, and column 5, lines 65-67, as described. At the time of the invention, it would have been obvious to a person of



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ordinary skill in the art to combine the category based browsing taught by Wang into the system as discussed above, in order to allow the user the ability to sort programs based on a specific category in order to more easily browse the EPG.

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With regards to claim 40, the Ludvig reference discloses an interactive program guide generator and delivery system, in which a headend, distribution network, and a plurality of set-top boxes (subscriber equipment) interact to deliver a combination of background information, video frame sequences, and program guide graphics to the subscriber to form the interactive program guide (IPG). The claimed system for transmitting information is met as follows: the claimed headend and distribution network for transmitting groups of information is met by the SPE 102 and Distribution Network 104. The claimed downstream channel interfaced to the distribution network for carrying transmitted groups of information is met by the implied connection of the distribution network 104 to subscriber equipment 106, as pictured in Figure 1. The claimed plurality of set top converter boxes for receiving said groups of information is met by subscriber equipment's (SE's) 106, 106<sub>2</sub>, and 106<sub>3</sub>. The claimed receiver for receiving groups of information is met by the demodulator/decoder 124, which demodulates the signals carried by the distribution network 104 and decodes the demodulated signals to extract the IPG pages from the bitstream. The claimed terminal processor for managing display of groups of information, with the terminal processor including a terminal processor application for selectively accessing and displaying one or more groups of information in response to inputs from a system viewer is met by the implied processes carried out in the subscriber equipment 106. The use of program

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identifiers to identify each page of the IPG (for selectively accessing one or more pages) and the "functionality control" which is broadcast with the IPG in the transport stream allow for the system to respond to viewer input. The claimed monitor is met by the video display 126 is responsible for displaying the IPG (see column 5, lines 16-37). The claimed input device is met by Ludvig column 8, lines 28-30, wherein he makes reference to a user actuated "input device" which is used to make selections through the subscriber equipment. Ludvig does not disclose that any of the above mentioned information is "text information".

Still with regards to claim 40, Wang teaches the transmission of an HTML-style electronic program guide (EPG) on a digital TV system. Wang also teaches a Data Streamer 18, which formats the HTML-style pages into partitioned MPEG-2 data packets for transport over an MPEG-2 digital television network in a rotating data carousel for delivery to a user set-top box. Therefore, the claimed "text information" is met by the fact that HTML is being broadcast in Wang's system. At the time of the invention it would have been clearly obvious to a person or ordinary skill in the art to incorporate HTML/text information of Wang into the system of Ludvig, in order to provide general EPG data to the set-top box in a standard format.

With regards to claim 41, the Ludvig reference discloses a first digital multiplexer 206 for receiving groups of information. Ludvig also discloses a system including a distribution network with at least one downstream channel. Ludvig does not disclose interleaving the groups into a plurality of carouseled, sequential data packets.

Still with regards to claim 41, Wang teaches the transmission of an HTML-style electronic program guide (EPG) on a digital TV system. Wang also teaches a Data Streamer 18, which formats the HTML-style pages into partitioned MPEG-2 data packets for transport over an MPEG-2 digital television network in a rotating data carousel for delivery to a user set-top box. Therefore, the claimed interleaving of groups into a plurality of carouseled, sequential data packets is met by Wang, column 2, lines 9-12 and 27-38. At the time of the invention it would have been clearly obvious to a person of ordinary skill in the art to incorporate the carouseled data transmission scheme of Wang into the system of Ludvig, in order to provide constant access to the steamed data at the set-top box by reception of the data carousel.

With regards to claim 42, Ludvig and Wang teach all of that which is discussed above with regards to claim 40 and 41. Wang further teaches a channel consisting of "multiple data streams". The claimed second digital multiplexer for receiving a multiplexed datastream from said first multiplexer, and multiplexing the datastream with a source of digital television signals to form a second multiplexed datastream that is comprised of groups of text information and digital television signals, and is broadcast by the distribution network on at least one downstream channel is met by Wang, column 7, lines 31-42, wherein he outlines the ability to broadcast a plurality of multiplexed digital television channels and broadcast data (EPG information) at the same time. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the digital television transmission and data broadcast transmission into the same transport stream of Wang into the system as discussed above, in order to

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allow for a simple system which transmits EPG data and audio/video information through the same distribution network and transport stream.

With regards to claim 43, the claimed system is met as follows: The claimed screen generator is met by the background storage device 118 and the IPG generator 116, which generates a background screen for the IPG. The claimed ability to deliver the background screen image is met by the fact that the background screen and IPG pages are then encoded within the IPG generator and sent to the modulator for network distribution. The claimed abilities to display the background screen and overlay selected groups of information onto the background is met by the IPG generator, wherein, IPG grids are overlaid atop the background/advertisement composite (see column 5, lines 4-15). The background screen and IPG pages are then encoded within the IPG generator and sent to the modulator for network distribution for later display at the user terminal.

With regards to claim 44, the claimed system is met as follows: The claimed encoder for digitally encoding the background screen is met by the IPG Generator 120. The claimed decoder for decoding the background screen at the receiver end is met by the Demodulator/Decoder 124. Column 4, lines 4-20 indicate the ability to encode, transmit, and decode the background screen, as claimed.

With regards to claim 45, the claimed server for accessing and formatting text information to be broadcast is met by Ludvig, column 4, lines 59-64, wherein he discusses receiving the Guide Data from a number of different sources and sending the

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data to the IPG Grid Generator 120. The IPG Grid Generator 120 then uses the data to format the IPG pages to be broadcast.

With regards to claim 46, the claimed database for storing text information to be accessed and formatted by the server is met by Ludvig's use of Guide Data, which is temporarily stored in the headend for use by the IPG Grid Generator 120. The IPG Grid Generator 120 then uses the data to format the IPG pages to be broadcast.

With regards to claim 47, the claimed remote server for storing text information is met by Ludvig, column 4, lines 59-64, wherein he discusses receiving the Guide Data from a number of different sources and sending the data to the IPG Grid Generator 120. The IPG Grid Generator 120 then uses the data to format the IPG pages to be broadcast.

With regards to claim 48, the claimed remote server being accessible by the headend server through the Internet is met by Ludvig, column 4, lines 59-64, wherein Ludvig states that the "IPG data ... can be provided from ... an internet site". This received data is then provided to the script generator (IPG Grid Generator 120) for use to format the IPG pages to be broadcast.

With regards to claim 49, Ludvig and Wang teach all of that which is discussed above with regards to claim 40 and 45. Wang further teaches the use of HTML pages for display of an EPG. The claimed server, which formats the groups of information as HTML or HTML-like pages of information, with each of the pages being formatted for display on a monitor, is met by Wang (see the Abstract). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine HTML

representation of the EPG of Wang into the system as discussed above, in order to provide general EPG data to the set-top box in a standard HTML text format.

With regards to claim 51, Ludvig and Wang teach all of that which is discussed above with regards to claim 40. Wang further teaches a work memory 28 and cache memory 30 for storing pages of EPG/IPG information for later use by the set-top box 24 and display. The claimed memory for storing groups of text information is met by column 4, lines 44-55, wherein Wang teaches the use of the two memory devices for storage of pages that are predicted to be requested on a rapid basis at a later time. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of a memory device of Wang into the system as discussed above, in order to allow for faster access to rapidly and frequently used pages of the EPG.

With regards to claim 52, Ludvig and Wang teach all of that which is discussed above with regards to claims 40 and 51. Wang further teaches a cache memory 30, which stores those pages that are expected to be needed on a rapid basis. The claimed ability to pre-cache groups of text information in memory before a request for display of selected groups of text information is met by column 4, lines 44-55, wherein Wang teaches that the EPG information is organized into a group of linked EPG pages. Therefore, it can be understood that those pages with references to currently viewed or recently viewed pages will subsequently be viewed and should therefore be stored in cache memory. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of a memory device of Wang into the

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system as discussed above, in order to allow for faster access to rapidly and frequently used pages of the EPG.

With regards to claim 53, Ludvig and Wang teach all of that which is discussed above with regards to claims 40 and 51. Wang further teaches a cache memory 30, which stores those pages that are expected to be needed on a rapid basis. The claimed background screen image, on which the groups of text information are to be overlaid when displayed on a monitor, is stored in memory, and accessed by the terminal processor application is met by column 4, lines 44-55, wherein Wang teaches that some frequently used pages (which constitutes the claimed background image) are stored in the cache memory 30. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of the ability to store pages (in our case, the background image) in the cache memory of Wang into the system as discussed above, in order to allow for faster access to the background image and therefore, faster page loading.

With regards to claim 54, Ludvig and Wang teach all of that which is discussed above with regards to claims 40 and 51. Wang further teaches downloading of a "channel guide control map" that associates a Channel Guide Broadcast Event with its channel number. The claimed virtual digital channel contained within the downstream channel, furthermore, the set top includes a channel mapping database in memory that identifies a virtual digital channel to which each of the groups of text information is assigned to facilitate display of the groups of text information by the terminal processor is met by the "channel guide control map" being stored in the control map cache 52E

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and used to map virtual channels. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of the "channel guide control map" and the control map cache of Wang into the system as discussed above, in order to allow for a mapping of virtual channels contained within the downstream channel.

With regards to claim 55, the Ludvig reference discloses an interactive program guide generator and delivery system, in which a headend, distribution network, and a plurality of set-top boxes (subscriber equipment) interact to deliver a combination of background information, video frame sequences, and program guide graphics to the subscriber to form the interactive program guide (IPG). The claimed method for transmitting information is met as follows: the claimed step of providing a plurality of groups of information in the network headend is met by the Guide Data in Figure 1. The claimed step of transmitting the plurality of groups of information through at least one downstream channel to a receiver in at least one set top converter box for receiving the groups of information is met by Figure 1, wherein the headend 102, distribution network 104, and subscriber equipments 106s are coupled together by an implied connection in order to transmit information. The claimed step of receiving a request to display at least a selected one of the groups of information from an input device interfaced to the set top is met by Ludvig column 8, lines 28-30, wherein he makes reference to a user actuated "input device" which is used to make selections through the subscriber equipment. The claimed step of accessing the selected group of information from the receiver is met by Ludvig column 5, lines 25-29, wherein he teaches the use of an input device to select a



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new IPG page. The claimed step of displaying the selected group of information on a monitor interfaced to the set top is met by Demodulator/Decoder 124, which selects to page to display, and Display 126, which displays the selected page. Ludvig does not disclose that any of the above mentioned information is "text information".

Still with regards to claim 55, Wang teaches the transmission of an HTML-style electronic program guide (EPG) on a digital TV system. Wang also teaches a Data Streamer 18, which formats the HTML-style pages into partitioned MPEG-2 data packets for transport over an MPEG-2 digital television network in a rotating data carousel for delivery to a user set-top box. Therefore, the claimed "text information" is met by the fact that HTML is being broadcast in Wang's system. At the time of the invention it would have been clearly obvious to a person of ordinary skill in the art to incorporate HTML/text information of Wang into the system of Ludvig, in order to provide general EPG data to the set-top box in a standard format.

With regards to claim 56, the Ludvig reference discloses a first digital multiplexer 206 for receiving groups of information. Ludvig also discloses a system including a distribution network with at least one downstream channel. Ludvig does not disclose interleaving the groups into a plurality of carousel, sequential data packets.

Still with regards to claim 56, Wang teaches the transmission of an HTML-style electronic program guide (EPG) on a digital TV system. Wang also teaches a Data Streamer 18, which formats the HTML-style pages into partitioned MPEG-2 data packets for transport over an MPEG-2 digital television network in a rotating data carousel for delivery to a user set-top box. Therefore, the claimed multiplexing of

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groups of text information into a plurality of carouseled, sequential data packets to form a multiplexed datastream is met by Wang, column 2, lines 9-12 and 27-38. At the time of the invention it would have been clearly obvious to a person of ordinary skill in the art to incorporate the carouseled data transmission scheme of Wang into the system of Ludvig, in order to provide constant access to the steamed data at the set-top box by reception of the data carousel.

With regards to claim 57, Ludvig and Wang teach all of that which is discussed above with regards to claim 55 and 56. Wang further teaches a channel consisting of "multiple data streams". The claimed step of multiplexing the first multiplexed datastream with a source of digital television signals to form a second multiplexed datastream that is comprised of the groups of text information and the digital television signals, and is broadcast on at least one downstream channel is met by Wang, column 7, lines 31-42, wherein he outlines the ability to broadcast a plurality of multiplexed digital television channels and broadcast data (EPG information) at the same time. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the digital television transmission and data broadcast transmission into the same transport stream of Wang into the system as discussed above, in order to allow for a simple system which transmits EPG data and audio/video information through the same distribution network and transport stream.

With regards to claim 58, the claimed method is met as follows: The claimed step of generating a digital background screen image is met by the background storage device 118 and the IPG generator 116, which generates a background screen for the

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IPG. The claimed ability to transmit the background screen image to the set top is met by the fact that the background screen and IPG pages are then encoded within the IPG generator and sent to the modulator for network distribution. The claimed abilities to display background screen image on a monitor, and overlay the selected group of information on the background screen is met by the IPG generator, wherein, IPG grids are overlaid atop the background/advertisement composite (see column 5, lines 4-15). The background screen and IPG pages are then encoded within the IPG generator and sent to the modulator for network distribution for later display at the user terminal.

With regards to claim 59, the claimed method is met as follows: The claimed step of digitally encoding a background screen image before it is broadcast is met by the IPG Generator 120. The claimed step of decoding the background screen image after it is received at the receiver end is met by the Demodulator/Decoder 124. Column 4, lines 4-20 indicate the ability to encode, transmit, and decode the background screen, as claimed.

With regards to claim 60, the claimed step of accessing and formatting text information to be broadcast into plurality of groups of text information with a server is met by Ludvig, column 4, lines 59-64, wherein he discusses receiving the Guide Data from a number of different sources and sending the data to the IPG Grid Generator 120. The IPG Grid Generator 120 then uses the data to format the IPG pages to be broadcast.

With regards to claim 61, the claimed step of accessing text information from a database in the network headend is met by Ludvig's use of Guide Data, which is

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temporarily stored in the headend for use by the IPG Grid Generator 120. The IPG Grid Generator 120 then uses the data to format the IPG pages to be broadcast.

With regards to claim 62, the claimed step of accessing text information from a remote server is met by Ludvig, column 4, lines 59-64, wherein he discusses receiving the Guide Data from a number of different sources and sending the data to the IPG Grid Generator 120. The IPG Grid Generator 120 then uses the data to format the IPG pages to be broadcast.

With regards to claim 63, the claimed step of accessing text information from a remote server through the Internet is met by Ludvig, column 4, lines 59-64, wherein Ludvig states that the "IPG data ... can be provided from ... an internet site". This received data is then provided to the script generator (IPG Grid Generator 120) for use to format the IPG pages to be broadcast.

With regards to claim 64, Ludvig and Wang teach all of that which is discussed above with regards to claim 55 and 60. Wang further teaches the use of HTML pages for display of an EPG. The claimed server, which formats the groups of information as HTML or HTML-like pages of information, with each of the pages being formatted for display on a monitor, is met by Wang (see the Abstract). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine HTML representation of the EPG of Wang into the system as discussed above, in order to provide general EPG data to the set-top box in a standard HTML text format.

With regards to claim 66, Ludvig and Wang teach all of that which is discussed above with regards to claim 55. Wang further teaches a cache memory 30, which

stores those pages that are expected to be needed on a rapid basis. The claimed step of pre-caching groups of text information in memory before a request for display of selected groups of text information is met by column 4, lines 44-55, wherein Wang teaches that the EPG information is organized into a group of linked EPG pages.

Therefore, it can be understood that those pages with references to currently viewed or recently viewed pages will subsequently be viewed and should therefore be stored in cache memory. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of a memory device of Wang into the system as discussed above, in order to allow for faster access to rapidly and frequently used pages of the EPG.

With regards to claim 67, Ludvig and Wang teach all of that which is discussed above with regards to claim 55. Wang further teaches downloading of a "channel guide control map" that associates a Channel Guide Broadcast Event with its channel number. The claimed step of accessing a channel mapping database in the set top that identifies a virtual digital channel to which each group of text information is assigned, and determining a location in a broadcast datastream where the selected group of information is located is met by the "channel guide control map" being stored in the control map cache 52E and used to map virtual channels. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of the "channel guide control map" and the control map cache of Wang into the system as discussed above, in order to allow for a mapping of virtual channels contained within the downstream channel.

6. Claims 50 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ludvig et al (6,415,437) and Wang (6,675,385), both cited by examiner in view of Kostreski et al (5,729,549), cited by examiner.

With regards to claim 50, Ludvig and Wang teach all of that which is discussed above with regards to claim 40. Ludvig and Wang do not teach the use of an upstream channel to request further information and provide further interactivity with the source of the EPG. Kostreski teaches "a shared use return data channel for upstream interactive signaling" (column 2, lines 37-49). Kostreski's mention of this method is purely a mention of prior art in which he establishes that the system is flawed for multiple reasons. He later goes on to disclose a similar system that utilizes another means of upstream communication (such as a public wireless packet data network), so as not to limit downstream broadcast bandwidth. At the time of the invention it would have been obvious to a person of ordinary skill in the art to implement the upstream communication, through either an upstream channel or another upstream communication means with the system as described by Ludvig and Wang, in order to provide for more interactivity and to allow the user to interactively request further groups of text information from the network headend.

With regards to claim 65, Ludvig and Wang teach all of that which is discussed above with regards to claim 55. Ludvig and Wang do not teach the use of an upstream channel to request further information and provide further interactivity with the source of the EPG. Kostreski teaches "a shared use return data channel for upstream interactive signaling" (column 2, lines 37-49). Kostreski's mention of this method is purely a

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mention of prior art in which he establishes that the system is flawed for multiple reasons. He later goes on to disclose a similar system that utilizes another means of upstream communication (such as a public wireless packet data network), so as not to limit downstream broadcast bandwidth. At the time of the invention it would have been obvious to a person of ordinary skill in the art to implement the upstream communication, through either an upstream channel or another upstream communication means with the system as described by Ludvig and Wang, in order to provide for more interactivity and to allow the user to interactively request further groups of text information from the network headend.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hooper et al (5,442,674) discloses a system for remotely displaying images in an interactive video system. The images are created through the use of a background and overlay portions. This system allows for graphical and user-friendly interfaces for interaction by the TV subscriber.

Fries (6,317,885) discloses an interactive entertainment and information system, which broadcasts pages to the set-top box on a periodic basis. Each page has link information and metadata associated with it in order to facilitate interaction by the user.

Noguchi et al (EP 0 721 253 A2) discloses an on screen program list (electronic programming guide) for use in a multiple channel broadcasting system. The

system provides the guide to be overlaid on top of the current video image being viewed, as well as a detailed guide interface.

Alexander et al (6,177,931) discloses a system for displaying program scheduling information or EPG. The system allows for greater interaction with the EPG and the ability to overlay advertisements onto the EPG.

Macrae et al (6,745,391) discloses a system for providing an EPG containing premium channel promotions.

Young et al (5,353,121) discloses a basic EPG system in which users can sort and view programming information by multiple categories and many other possible sorting techniques.

Klosterman et al (6,078,348) discloses a basic EPG system for use in a multiple site broadcast system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael R Shannon whose telephone number is 703-305-6955. The examiner can normally be reached on M-F 7:30-5:00, alternate Friday's off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on 703-305-4795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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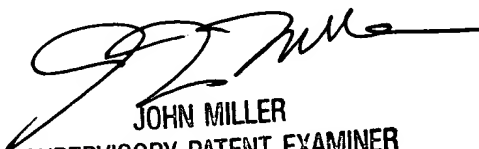
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Michael R Shannon  
Examiner  
Art Unit 2614

Michael R Shannon  
July 29, 2004

  
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